CLAIMS

1. A process for the preparation of a solution comprising a substantially pure isoform of AT-III, comprising separating the isoform AT-IIIα from AT-IIIβ on a calcium hydroxyphosphate-based adsorbent.

2. The process according to claim 1, comprising the steps
(i) preparing a solution mainly comprising AT-III;
(ii) contacting the said solution with the calcium hydroxyphosphate-based adsorbent;
(iii) eluting and collecting the protein fraction comprising the substantially pure isoform of AT-III.

3. The process according to claim 1 ~~or 2~~ wherein the separation of AT-IIIα and AT-IIIβ is carried out by column chromatography.

4. The process according to claim 1 for the preparation of substantially pure AT-IIIα.

5. The process according to claim 4 wherein AT-IIIα is eluted from the calcium hydroxyphosphate-based adsorbent with a buffer having a phosphate concentration of from about 50 mM to about 150 mM.

6. The process according to claim 1 for the preparation of substantially pure AT-IIIβ.

7. The process according to claim 6 wherein AT-IIIβ is eluted from the calcium hydroxyphosphate-based adsorbent with a buffer having a phosphate concentration of from about 150 mM to about 400 mM.

8. The process according to claim 1 wherein the said calcium hydroxyphosphate-based adsorbent is hydroxyapatite.

9. The process according to claim 1 wherein separation of AT-IIIα and AT-IIIβ is carried out at a pH of from about 6.0 to about 7.5.

10. The process according to claim 2 wherein the said solution mainly comprising AT-III is prepared by a process comprising the steps
(i) preparing a Cohn Fraction I supernatant from human plasma;
(ii) contacting the said Cohn Fraction I supernatant with an affinity gel capable of binding AT-III; and
(iii) eluting and collecting the protein fraction binding to the said affinity matrix.

11. The process according to claim 10 wherein the said affinity gel comprises heparin as the affinity ligand.

12. The process according to claim 1 wherein the obtained isoform of AT-III is substantially free from histidine-rich glycoprotein (HRGP).

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